

SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS
DOCUMENT MAY BE ILLEGIBLE
DUE TO BAD SOURCE
DOCUMENTS.

TABLE 1

<u>Volatiles</u>	<u>PPM</u>
Trichloroethene	391
Tetrachloroethene	11
Toluene	14
Chlorobenzene	121
Ethylbenzene	16
1,2-Dichlorobenzene	66

<u>Semi-Volatiles</u>	<u>PPM</u>
1,2-Dichlorobenzene	86
1,3-Dichlorobenzene	220
1,4-Dichlorobenzene	210
Benzoalcohol	99
2-Methyl Napthalene	4
2,4-Dichlorophenol	360
1,2,4-Trichlorobenzene	140
Hexachlorobenzene	16
Docosane	4700

CER 080708

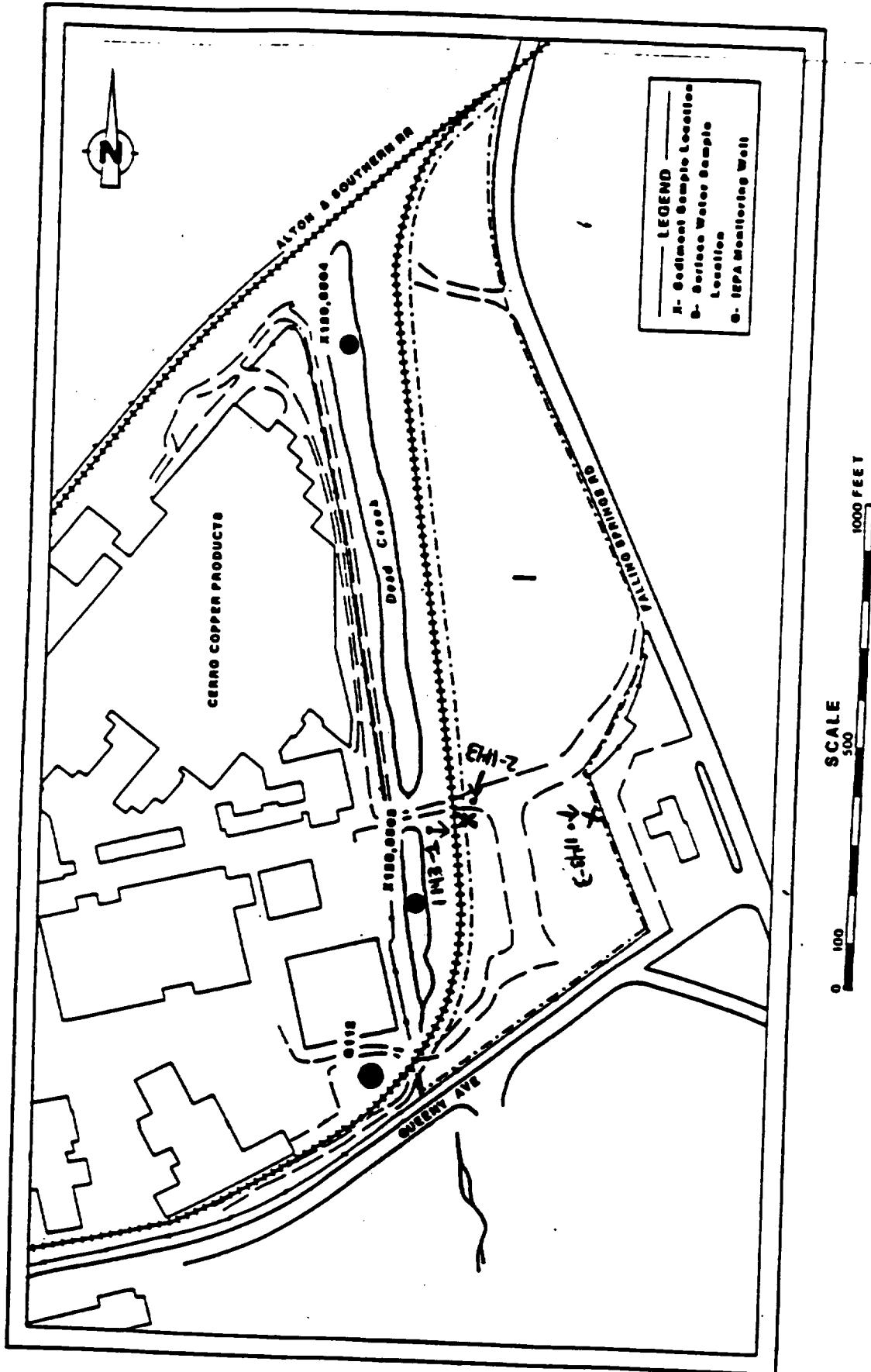


FIGURE IA-1
DEAD CREEK SITE AREA I AND CREEK SECTOR A WITH SAMPLING LOCATIONS

IA-5

CER 080709

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1 6 3 0 2 0 0 0 0 5

REGION 6 CO. ST. CLAIR

FACILITY NAME (CERRO COPPER) SAUGET / SAUGET SITES

SITE BILLING CODE LP 52 005

MONITOR POINT NUMBER D I O 2 DATE COLLECTED 09/25/89

TIME COLLECTED 14:35 MONITOR POINT SAMPLED BY 3 DRILLING / SPLASH SEACH
(24 HR CLOCK) (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) N

COLLECTED BY C. T. RADE DIVISION OR CO. ADVENT

SAMPLE APPEARANCE: '

COLLECTOR COMMENTS: 6

Pyramid Electric Surv

TEST REQUESTED: Volatile

Run analysis in order

TURN AROUND TIME REQUESTED

*Sample
Results*

LAB USE ONLY

FIELD MEASUREMENTS

TO WATER (ft. below LS) -----

ION OF GW SURFACE (ft. ref MSL) -----

GWL DEPTH FT. (below LS) -----

(ft.) - Field -----

INDUCTANCE (units) - Field -----

TEMP WATER SAMPLE (°F) - Field -----

LAB NAME -----

ADDRESS -----

LAB Sample No. _____ CC REPORT NO. _____

DATE REC'D. ____/____/____ TIME REC'D. ____:____

TEMP O.K. (Y/N) SAMPLE PRESERVED O.K. (Y/N)

LAB COMMENTS -----

CER 080710

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHAIN OF CUSTODY

I certify that the samples listed below were collected in my presence and that each sample bottle was sealed intact by me and that I wrote my initials and the date on the seal of each bottle.

Site Inventory No. 1630200005

Federal I.D. No. 980792006

County St. Clair, ILL.
Cerro Copper Produc
(Facility Name)

I certify I received the above samples, with each seal on each bottle intact and the sealer's initials written on each sample seal.

I certify I received the above samples with each seal on each bottle intact, and the sealer's initials written on each sample seal. After recording these samples in the official record book, these same samples will be in the custody of competent laboratory personnel at all times or locked in a secured area.

Signature _____ **Date** _____ **Time** _____ **A.M. P.M.**

Lab Location _____ **(City)** _____

CER 080711

IL 532-1147
LPC 141 9/83

120-01



P.O. Box 6666X
St. Louis, MO 63166-6600
618/337-6000

October 4, 1989

CERTIFIED MAIL

Mr. Paul E. Takacs, Manager
Federal Site Management Unit
Remedial Project Management Unit
Division of Land Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794-9276

Subject: Pole Drilling Incident - 9/20/89
L163200005-St. Clair
Sauget Sites (Area I, Site I)

RECEIVED
IEPA
OCT 11 1989
COLLINSVILLE OFFICE

Dear Paul:

This letter is written to provide a complete description of the pole drilling incident which took place on the subject property on 9/20/89. As you are aware Cerro has been taking positive steps to secure the area in question. An 8 foot high chain link fence topped with barbed wire has been erected around the Dead Creek Segment A. In conjunction with this increased security, Cerro is installing an electronic surveillance system around its plant with panning television cameras monitoring Area I, Site I. To this end Cerro's contractor, Pyramid Electric, was erecting a pole to carry cable to the camera system which would monitor Area I, Site I. Cerro's consultant had recently completed a detailed characterization of Dead Creek Segment A sediments. From all available information at the time Cerro had no reason to believe that Site I landfill waste extended that close to Old Queeny Road.

At approximately 3:30 p.m. on 9/20/89, the drilling crew hit an object that may have been a buried drum of an unknown nature. At that time a Mr. Robert Gusmann from Pyramid was overcome by vapors apparently emanating from the hole. When I arrived at the site, I observed a hole approximately 16 to 20 inches in diameter and approximately 6 to 8 feet deep. There was an odor of chlorinated hydrocarbons. Mr. Gusmann was directed to our Medical Department where we have a registered nurse on staff to provide first aid. Mr. Gusmann was complaining of a tightness in the chest and dizziness. At Medical, Mr. Gusmann was given oxygen and told to wash his hands of the soil he had contacted at the drilling site when he tried to remove what appears to have been a barrel lid from the auger. He then was transported to the hospital by a Cerro contracted ambulance.

It was then decided that the hole should be filled in to prevent any other vapors from escaping. Two Cerro employees wearing organic vapor respirators and using a wheel loader pushed the dirt brought up from the hole back into the hole and covered the hole with construction sand. The hole was completely covered by 4:00 p.m.

CER 080712

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KM

TMI 101

CERRO COPPER PRODUCTS CO.

In the evening, Cerro took a sample off the auger and brought it to the Monsanto Lab for possible identification in an effort to help the doctor treating Mr. Gusmann. Monsanto's lab phoned Cerro's Plant Manager at about 3:10 a.m. to inform him that the best they could determine it was a high boiling point petroleum distillate. Cerro had the sample returned and sent it to Environmetrics in St. Louis to determine its composition. I have attached a copy of their lab report.

On 9/25/89, Cerro had its consultant, The Avendt Group, drill back down through the same hole to obtain a sample for IEPA and Cerro. The sample was sent to Gulf Coast Labs in Chicago, IL. Results are expected in about 2 to 3 weeks. Cerro will share its results with IEPA. We also request that IEPA provide Cerro a copy of its lab results. The hole drilled by Avendt was grouted at the bottom and again at the top after the cuttings were placed back into the hole.

On 9/25/89, two representatives from the IEPA Collinsville field office, a Mr. Tom Powell and a Mr. Tom Miller were at Cerro to investigate the incident. While at the facility, they took photographs of the site. Later that day, Tom Miller returned to pick up a split sample taken from the hole.

At your recommendation, Pyramid Electric's trucks were decontaminated with a high pressure water cleaner and detergent on 9/26/89 and returned to Pyramid. The water was directed to the process sewer per your instructions.

If you have any questions, please contact this office.

Very truly yours,

CERRO COPPER PRODUCTS CO.



Joseph M. Grana
Manager of Environmental
and Energy Affairs

JMG:slt

cc: Ken Mensing - IEPA-Collinsville

bcc: H. Schweich
J. Matcuk
P. Tandler
M. Rodberg

CER 080713

A member of The Marmon Group of companies

CERRO COPPER
PO BOX 681
EAST ST. LOUIS, IL 62202

ATTN: JOE GRANA
INVOICE #6107

ENVIRONMETRICS

2345 Millpark Drive

Maryland Heights

St. Louis County, MO 63043

(314) 427-0550

SEMI-VOLATILE ORGANIC ANALYSIS

METHOD SW-846 8270 & LIBRARY SEARCH

SAMPLE ID: JMG09/22/89-1

*Auger sample from
Hale Drilling Dividend
on 9/20/89*

RESULTS

541-73-1	1, 3-DICHLOROBENZENE	- 220 ppm
106-46-7	1, 4-DICHLOROBENZENE	- 210
100-51-6	BENZYL ALCOHOL	- 99
95-50-1	1, 2-DICHLOROBENZENE	- 86
120-83-2	2, 4-DICHLOROPHENOL	- 360
120-82-1	1, 2, 4-TRICHLOROBENZENE	- 140
91-57-6	2-METHYLNAPHTHALENE	- 4
118-74-1	HEXACHLOROBENZENE	- 16
	DOCOSANE	- 602
	2, 6, 10, 15-TETRAMETHYLHEPTADECANE	- 410
	PENTATRIACONTANE	- 500
	2, 4, 6-TRICHLORO-1, 1-BIPHENYL	- 150
	2, 3, 6-TRICHLORO-1, 1-BIPHENYL	- 210

These laboratory test results are intended to be helpful and informative. They are based on our best experience, current industry testing procedures, and information provided with the sample, which we believe to be reliable. We cannot assume responsibility for any loss or accident that may result from use of the information given.

CER 080714

SEPTEMBER 25, 1989

Wayne L. Cooper
WAYNE L. COOPER
LABORATORY DIRECTOR

ENVIRONMETRICS

CERRO COPPER
PO BOX 681
EAST ST. LOUIS, IL 62202

ATTN: JOE GRANA
INVOICE #6107

2345 Millpark Drive
Maryland Heights
St. Louis County, MO 63043
(314) 427-0550

VOLATILE ORGANIC ANALYSIS

METHOD SW-846 8240 & LIBRARY SEARCH

SAMPLE ID: JMG09/22/89-1

*Auger sample from
Hole Drilling Incident
on 9/20/89*

CAS NUMBER	RESULTS
79-01-6	- 391 ppm
71-43-2	- 11
127-18-4	- 26
108-88-3	- 14
108-90-7	- 121
100-41-4	- 16
95-50-1	- 66

These laboratory test results are intended to be helpful and informative. They are based on our best experience, current industry testing procedures, and information provided with the sample, which we believe to be reliable. We cannot assume responsibility for any loss or accident that may result from use of the information given.

CER 080715

SEPTEMBER 22, 1989

WL Cooper
WAYNE L. COOPER
LABORATORY DIRECTOR



CERRO COPPER PRODUCTS CO.
P.O. Box 68800
St. Louis, Mo. 63168-6800
618/337-6000

October 11, 1989

CERTIFIED MAIL

Mr. Paul E. Takacs, Manager
Federal Site Management Unit
Remedial Project Management Unit
Division of Land Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, IL 62794-9276

Subject: Pole Drilling Incident - September 20, 1989
L163200005 - St. Clair
Sauget Sites (Area I, Site I)

Dear Paul:

As promised in my letter dated October 4, 1989 concerning the subject incident, I am submitting the results of analysis on the sample taken by The Avendt Group on September 25, 1989. The Avendt Group obtained the sample by drilling back down through the same hole made by Pyramid Electric on September 20, 1989. The sample was split with the Illinois EPA - Collinsville Field Office.

I have also provided a summary of results for your convenience.

As previously requested, Cerro would like the IEPA to provide a copy of its results of analysis on the split sample.

If you have any questions, please contact this office.

Very truly yours,

CERRO COPPER PRODUCTS CO.

Joseph M. Grane
Joseph M. Grane
Manager of Environmental
and Energy Affairs

JMG/ge

cc: Ken Mensing IEPA - Collinsville

CER 080716

RECEIVED
IEPA

OCT 16 1989

COLLINSVILLE OFFICE

KM



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TM 10
TP 10/16

Sample Split w. IEPA from Avendt Drillin. 3/25/89
 Gulf Coast Laboratories

% Solids ~~106-43-4~~ 94.2

~~106-43-4~~

Volatiles ppm

Acetone	4.1
1,2-Dichloroethene	1.6
2-Butanone	3.9
Vinyl Acetate	0.4
Trichloroethene	140.0
Benzene 106-43-2	4.5
Tetrachloroethene	9.8
Toluene 108-86-3	5.5
Chlorobenzene 118-90-7	53.0
Ethylbenzene 100-41-4	5.9
Xylene	2.6

Semi-Volatiles ppm ppm
 (1) (2)

* Phenol	210	
1,4-Dichlorobenzene 106-46-7	110	
1,2-Dichlorobenzene 106-42-4	38	28
* 2,4-Dichlorophenol -	260	190
1,2,4-Trichlorobenzene 11002-43-1	100	
4-Chloroaniline 106-46-2	140	230
2,4,6-Trichlorophenol 106-46-2	120	92
* 2,4,5-Trichlorophenol 106-43-4	53	34

(1)=Diluted extract

(2)=Nondiluted

Other Tentatively Identified Compounds
 by Library Search-Estimated Concentration

	ppm
Benzeamine+Tetrachlorobenzene	300
Trichloro-Methoxybenzene	500
Eicosane	400
Tetrachloropentachloro-Biphenyl	200
Docosane	700
Pentachloro-Biphenyl	800
Hexachloro-Biphenyl	600
Heptachloro-Biphenyls	4300
Octachloro-Biphenyls	1700
Unknown Hydrocarbons	3900

PCBs ppm

Arcolor-1248	5600
Aroclor-1260	7000

Other Organic Compounds ppm CER 080717

✓ 2,4-Dichlorophenoxyacetic Acid	✓ 68
✓ 2,4,5-Trichlorophenoxy Propionic Acid	✓ 200

RECEIVED
 IEPA
 OCT 13 1989
 COLLINSVILLE OFFICE



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (312) 534-8200 (219) 888-7077 (815) 721-

October 6, 1989

Mr. Chris Bade
Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Dear Mr. Bade:

Please find enclosed the analytical report for the sample submitted to Weston/Gulf Coast Laboratories for analyses. They were identified as follows:

CLIENT ID	LAB ID#	SAMPLE DATE	DATE RECEIVED
DI-1 & 3	8909G010-001	09/25/89	09/26/89

If you have any questions, please contact Sheryl Johnson or Lynn Gifford at our laboratories.

Sincerely,

WESTON/GULF COAST LABORATORIES

Jeff A. Kaczinski
Jeff A. Kaczinski
GC/MS Unit Leader

Linda S. Mackley
Linda S. Mackley
Organics Unit Leader

jvb

Enclosures

CER 080718

DATA QUALIFIERS

- U** - Indicates an inorganic compound was analyzed for but not detected.
- U** - Indicates an organic compound was analyzed for but not detected.
- J** - Indicates an estimated value for either a TIC or an analyte that meets the identification criteria but the result is less than the specified detection limit.
- B** - Indicates the compound was found in the blank and the sample.
- E** - Concentrations exceed calibration range of the instrument.
- BS** - Indicates matrix analyses were conducted on reagent grade water.
- BSD** - Blank Spike Duplicate
- BDL** - Below Detection Limit
- MS** - Matrix Spike
- MSD** - Matrix Spike Duplicate
- D** - Indicates that surrogate/matrix spike recoveries were not obtained because the extract had to be diluted for analysis.
- DL** - Indicates a secondary dilution
- NA** - Not Applicable
- DF** - Dilution factor

Revised 06/16/89

CER 080719



WESTCOAST COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phones: (312) 834-8200 (219) 883-7077 (312) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Monday October 2nd, 1989
RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89

Inorganic Client Data Report

CER 080720



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phone: (312) 834-8200 (219) 888-7077 (815) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # S160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

VOLATILES BY GC/MS, SPECIAL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	1100	U
Bromomethane	BDL	1100	U
Vinyl Chloride	BDL	1100	U
Chloroethane	BDL	1100	U
Methylene Chloride	BDL	530	U
X Acetone	4100	1100	
Carbon Disulfide	BDL	530	U
1,1-Dichloroethene	BDL	530	U
1,1-Dichloroethane	BDL	530	U
X 1,2-Dichloroethene (total)	1600	530	
Chloroform	BDL	530	U
1,2-Dichloroethane	BDL	530	U
X 2-Butanone	3900	1100	
1,1,1-Trichloroethane	BDL	530	U
Carbon Tetrachloride	BDL	530	U
X Vinyl Acetate	440	1100	J
Bromodichloromethane	BDL	530	U

CER 080721



WEST SULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phone: (312) 534-5200 (219) 588-7077 (815) 723-75

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

VOLATILES BY GC/MS, SPECIAL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	530	U
cis-1,3-Dichloropropene	BDL	530	U
X Trichloroethane	E	530	
Dibromochloromethane	BDL	530	U
1,1,2-Trichloroethane	BDL	530	U
X Benzene	4500	530	
Trans-1,3-Dichloropropene	BDL	530	U
Bromoform	BDL	530	U
4-Methyl-2-pentanone	BDL	1100	U
2-Hexanone	BDL	1100	U
X Tetrachloroethene	9800	530	
1,1,2,2-Tetrachloroethane	BDL	530	U
X Toluene	5500	530	
X Chlorobenzene	E	530	
X Ethylbenzene	5900	530	
Styrene	BDL	530	U
X Xylene (total)	2600	530	

CER 080722



WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phone: (312) 534-8200 (219) 888-7077 (815) 723-7

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/25/89
Units: UG/KG

VOLATILES BY GC/MS, SPECIAL LIST

Volatile Compound	Result	Detection Limit	Flag
2-chloroethylvinylether	BDL	530	U
Dichlorodifluoromethane	BDL	2100	U
Trichlorofluoromethane	BDL	1100	U
Bis(chloromethyl)ether	BDL	2100	U
2-Chlorotoluene	BDL	530	U
4-Chlorotoluene	BDL	530	U
1,2,3-Trichloropropane	BDL	530	U
1,1,1,2-Tetrachlorethane	BDL	530	U
Chloroacetaldehyde	BDL	1100	U
1-Chlorohexane	BDL	1100	U

CER 080723



WEBTO JLF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phones: (312) 834-8200 (219) 888-7077 (815) 723-7

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

CER 080724



WESTO. JLF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phone: (312) 534-5200 (219) 888-7077 (815) 723

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001 DL
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

VOLATILES BY GC/MS, SPECIAL LIST

Volatile Compound	Result	Detection Limit	Flag
X Trichloroethane	140000	5300	
X Chlorobenzene	53000	5300	

CER 080725



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phone: (312) 534-5200 (219) 888-7077 (316) 723-7

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 8909G010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMIVOLATILES BY GC/MS, HSL LIST

	Semivolatile Compound	Result	Detection Limit	Flag
X	Phenol	210000	170000	
	bis(2-Chloroethyl)ether	BDL	170000	U
	2-Chlorophenol	BDL	170000	U
	1,3-Dichlorobenzene	BDL	170000	U
X	1,4-Dichlorobenzene	110000	170000	J
	Benzyl alcohol	BDL	170000	U
X	1,2-Dichlorobenzene	38000	170000	J
	2-Methylphenol	BDL	170000	U
	bis(2-Chloroisopropyl)ether	BDL	170000	U
	4-Methylphenol	BDL	170000	U
	N-Nitroso-Di-n-propylamine	BDL	170000	U
	Hexachloroethane	BDL	170000	U
	Nitrobenzene	BDL	170000	U
	Isophorone	BDL	170000	U
	2-Nitrophenol	BDL	170000	U
	2,4-Dimethylphenol	BDL	170000	U
	Benzoic acid	BDL	870000	U

CER 080726



WESTON, GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phone: (312) 834-8200 (219) 888-7077 (815) 723-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
bis(2-Chloroethoxy)methane	BDL	170000	U
X 2,4-Dichlorophenol	260000	170000	
X 1,2,4-Trichlorobenzene	100000	170000	J
Naphthalene	BDL	170000	U
X 4-Chloroaniline	140000	170000	J
Hexachlorobutadiene	BDL	170000	U
4-Chloro-3-methylphenol	BDL	170000	U
2-Methylnaphthalene	BDL	170000	U
Hexachlorocyclopentadiene	BDL	170000	U
X 2,4,6-Trichlorophenol	120000	170000	J
X 2,4,5-Trichlorophenol	53000	870000	J
2-Chloronaphthalene	BDL	170000	U
2-Nitroaniline	BDL	870000	U
Dimethylphthalate	BDL	170000	U
Acenaphthylene	BDL	170000	U
2,6-Dinitrotoluene	BDL	170000	U
3-Nitroaniline	BDL	870000	U

CER 080727



WESTG. GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phones: (312) 834-5200 (219) 885-7077 (815) 723-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMIVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Acenaphthene	BDL	170000	U
2,4-Dinitrophenol	BDL	870000	U
4-Nitrophenol	BDL	870000	U
Dibenzofuran	BDL	170000	U
2,4-Dinitrotoluene	BDL	170000	U
Diethylphthalate	BDL	170000	U
4-Chlorophenyl-phenylether	BDL	170000	U
Fluorene	BDL	170000	U
4-Nitroaniline	BDL	870000	U
4,6-Dinitro-2-methylphenol	BDL	870000	U
N-Nitrosodiphenylamine (1)	BDL	170000	U
4-Bromophenyl-phenylether	BDL	170000	U
Hexachlorobenzene	BDL	170000	U
Pentachlorophenol	BDL	870000	U
Phenanthrene	BDL	170000	U
Anthracene	BDL	170000	U
Di-n-Butylphthalate	BDL	170000	U

CER 080728



MANAGERS

DESIGNERS/CONSULTANTS

WEST GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phones: (312) 634-6200 (219) 888-7077 (815) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 8909G010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Fluoranthene	BDL	170000	U
Pyrene	BDL	170000	U
Butylbenzylphthalate	BDL	170000	U
3,3'-Dichlorobenzidine	BDL	350000	U
Benzo(a)anthracene	BDL	170000	U
Chrysene	BDL	170000	U
bis(2-Ethylhexyl)phthalate	BDL	170000	U
Di-n-Octyl phthalate	BDL	170000	U
Benzo(b)fluoranthene	BDL	170000	U
Benzo(k)fluoranthene	BDL	170000	U
Benzo(a)pyrene	BDL	170000	U
Indeno(1,2,3-cd)pyrene	BDL	170000	U
Dibenzo(a,h)anthracene	BDL	170000	U
Benzo(g,h,i)perylene	BDL	170000	U

CER 080729



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phone: (312) 834-8200 (219) 888-7077 (815) 723

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

Tentatively Identified Compounds

20 Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Semivolatile Compound	Retention Time	Estimated Concentration
X BENZENAMINE+TETRACHL-BENZENE	16.77	300000 J
X TRICHLORO-METHOXY-BENZENE	18.90	500000 J
X EICOSANE	26.75	400000 J
X TETRACHL.+PENTACHL. BIPHENYL	27.94	200000 J
X UNKNOWN HYDROCARBON	28.00	400000 J
X PENTACHLORO-BIPHENYL	28.51	400000 J
X DOCOSANE	29.18	700000 J
X PENTACHLORO-BIPHENYL	29.43	400000 J
X UNKNOWN HYDROCARBON	30.31	600000 J
X HEXACHLORO-BIPHENYL	31.29	600000 J

CER 080730



WESTEN GULF COAST LABORATORIES, INC.
2617 Bond St., University Park, Illinois 60468
Phone: (312) 534-5200 (219) 888-7077 (815) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 8909G010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

Tentatively Identified Compounds

Semivolatile Compound	Retention	Estimated
	Time	Concentration
X UNKNOWN HYDROCARBON	31.39	500000 J
X Unknown	31.87	1000000 J
X HEPTACHLORO-BIPHENYL	32.23	300000 J
X HEPTACHLORO-BIPHENYL	32.89	1000000 J
X UNKNOWN HYDROCARBON	33.44	400000 J
X UNKNOWN+HEPTACHLORO-BIPHENYL	33.59	3000000 J
X UNKNOWN+OCTACHLORO-BIPHENYL	33.89	900000 J
X Unknown	34.77	400000 J
X OCTACHLORO-BIPHENYL	35.08	800000 J
X Unknown	35.20	600000 J

CER 080731



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phone: (312) 834-5200 (219) 888-7077 (815) 723-1

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DJ-1 & 3
Project # 5160-01-01-0001
Lab ID: 89090010-001 MS
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Phenol	D	180000	S
bis(2-Chloroethyl)ether	BDL	180000	U
2-Chlorophenol	D	180000	S
1,3-Dichlorobenzene	BDL	180000	U
1,4-Dichlorobenzene	D	180000	S
Benzyl alcohol	BDL	180000	U
X 1,2-Dichlorobenzene	28000	180000	J
2-Methylphenol	BDL	180000	U
bis(2-Chloroisopropyl)ether	BDL	180000	U
4-Methylphenol	BDL	180000	U
N-Nitroso-Di-n-propylamine	D	180000	S
Hexachloroethane	BDL	180000	U
Nitrobenzene	BDL	180000	U
Isophorone	BDL	180000	U
2-Nitrophenol	BDL	180000	U
2,4-Dimethylphenol	BDL	180000	U
Benzoic acid	BDL	880000	U

CER 080732



WESTON MANAGERS DESIGNERS CONSULTANTS, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (312) 534-5200 (216) 888-7077 (815) 723

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001 MS
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
bis(2-Chloroethoxy)methane	BDL	180000	U
X 2,4-Dichlorophenol	190000	180000	
1,2,4-Trichlorobenzene	D	180000	S
Naphthalene	BDL	180000	U
X 4-Chloroaniline	230000	180000	
Hexachlorobutadiene	BDL	180000	U
4-Chloro-3-methylphenol	D	180000	S
2-Methylnaphthalene	BDL	180000	U
Hexachlorocyclopentadiene	BDL	180000	U
X 2,4,6-Trichlorophenol	92000	180000	J
X 2,4,5-Trichlorophenol	34000	880000	J
2-Choronaphthalene	BDL	180000	U
2-Nitroaniline	BDL	880000	U
Dimethylphthalate	BDL	180000	U
Acenaphthylene	BDL	180000	U
2,6-Dinitrotoluene	BDL	180000	U
3-Nitroaniline	BDL	880000	U

CER 080733



WESTON GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60446
Phone: (312) 534-8200 (219) 888-7077 (815) 722-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 8909G010-001 MS
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Acenaphthene	D	180000	S
2,4-Dinitrophenol	BDL	880000	U
4-Nitrophenol	D	880000	S
Dibenzofuran	BDL	180000	U
2,4-Dinitrotoluene	D	180000	S
Diethylphthalate	BDL	180000	U
4-Chlorophenyl-phenylether	BDL	180000	U
Fluorene	BDL	180000	U
4-Nitroaniline	BDL	880000	U
4,6-Dinitro-2-methylphenol	BDL	880000	U
N-Nitrosodiphenylamine (1)	BDL	180000	U
4-Bromophenyl-phenylether	BDL	180000	U
Hexachlorobenzene	BDL	180000	U
Pentachlorophenol	D	880000	S
Phenanthrene	BDL	180000	U
Anthracene	BDL	180000	U
Di-n-Butylphthalate	BDL	180000	U

CER 080734



2617 Bond St., University Park, Illinois 60466
Phone: (312) 834-8200 (219) 868-7077 (815) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001 MS
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Fluoranthene	BDL	180000	U
Pyrene	D	180000	S
Butylbenzylphthalate	BDL	180000	U
3,3'-Dichlorobenzidine	BDL	350000	U
Benzo(a)anthracene	BDL	180000	U
Chrysene	BDL	180000	U
bis(2-Ethylhexyl)phthalate	BDL	180000	U
D1-n-Octyl phthalate	BDL	180000	U
Benzo(b)fluoranthene	BDL	180000	U
Benzo(k)fluoranthene	BDL	180000	U
Benzo(a)pyrene	BDL	180000	U
Indeno(1,2,3-cd)pyrene	BDL	180000	U
Dibenzo(a,h)anthracene	BDL	180000	U
Benzo(g,h,i)perylene	BDL	180000	U

CER 080735



2417 Bond St., University Park, Illinois 60426
Phone: (312) 834-6200 (219) 888-7077 (815) 72

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89098010-001 MSD
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Phenol	D	170000	S
bis(2-Chloroethyl)ether	BDL	170000	U
2-Chlorophenol	D	170000	S
1,3-Dichlorobenzene	BDL	170000	U
1,4-Dichlorobenzene	D	170000	S
Benzyl alcohol	BDL	170000	U
X 1,2-Dichlorobenzene	35000	170000	J
2-Methylphenol	BDL	170000	U
bis(2-Chloroisopropyl)ether	BDL	170000	U
4-Methylphenol	BDL	170000	U
N-Nitroso-Di-n-propylamine	D	170000	S
Hexachloroethane	BDL	170000	U
Nitrobenzene	BDL	170000	U
Isophorone	BDL	170000	U
2-Nitrophenol	BDL	170000	U
2,4-Dimethylphenol	BDL	170000	U
Benzoic acid	BDL	870000	U

CER 080736



2417 BLOOR ST. University Park, Illinois 60486
Phone: (312) 534-8200 (219) 885-7077 (815) 723

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89090010-001 MSD
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMI-VOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
bis(2-Chloroethoxy)methane	BDL	170000	U
X 2,4-Dichlorophenol	180000	170000	
1,2,4-Trichlorobenzene	D	170000	S
Naphthalene	BDL	170000	U
X 4-Chloroaniline	170000	170000	
Hexachlorobutadiene	BDL	170000	U
4-Chloro-3-methylphenol	D	170000	S
2-Methylnaphthalene	BDL	170000	U
Hexachlorocyclopentadiene	BDL	170000	U
X 2,4,6-Trichlorophenol	100000	170000	J
X 2,4,5-Trichlorophenol	57000	870000	J
2-Chloronaphthalene	BDL	170000	U
2-Nitroaniline	BDL	870000	U
Dimethylphthalate	BDL	170000	U
Acenaphthylene	BDL	170000	U
2,6-Dinitrotoluene	BDL	170000	U
3-Nitroaniline	BDL	870000	U

CER 080737



2417 Bond St., University Park, Illinois 60468
Phone: (312) 934-8200 (219) 888-7077 (815) 723-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001 MSD
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Acenaphthene	D	170000	S
2,4-Dinitrophenol	BDL	870000	U
4-Nitrophenol	D	870000	S
Dibenzofuran	BDL	170000	U
2,4-Dinitrotoluene	D	170000	S
Diethylphthalate	BDL	170000	U
4-Chlorophenyl-phenylether	BDL	170000	U
Fluorene	BDL	170000	U
4-Nitroaniline	BDL	870000	U
4,6-Dinitro-2-methylphenol	BDL	870000	U
N-Nitrosodiphenylamine (1)	BDL	170000	U
4-Bromophenyl-phenylether	BDL	170000	U
Hexachlorobenzene	BDL	170000	U
Pentachlorophenol	D	870000	S
Phenanthrene	BDL	170000	U
Anthracene	BDL	170000	U
Di-n-Butylphthalate	BDL	170000	U

CER 080738



2417 BLOOR ST., UNIVERSITY PARK, ILLINOIS 60488
PHONE: (312) 834-8200 (218) 888-7077 (218) 723-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Thursday September 28th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001 MSD
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

SEMOVOLATILES BY GC/MS, HSL LIST

Semivolatile Compound	Result	Detection Limit	Flag
Fluoranthene	BDL	170000	U
Pyrene	D	170000	S
Butylbenzylphthalate	BDL	170000	U
3,3'-Dichlorobenzidine	BDL	350000	U
Benzo(a)anthracene	BDL	170000	U
Chrysene	BDL	170000	U
bis(2-Ethylhexyl)phthalate	BDL	170000	U
D1-n-Octyl phthalate	BDL	170000	U
Benzo(b)fluoranthene	BDL	170000	U
Benzo(k)fluoranthene	BDL	170000	U
Benzo(a)pyrene	BDL	170000	U
Indeno(1,2,3-cd)pyrene	BDL	170000	U
Dibenzo(a,h)anthracene	BDL	170000	U
Benzo(g,h,i)perylene	BDL	170000	U

CER 080739



WEST GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60468
Phone: (312) 834-8200 (219) 888-7077 (815) 723-

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Friday October 6th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

PESTICIDE/PCBs BY GC, CLP LIST

Compound	Result	Detection Limit	Flag
Alpha-BHC	BDL	17000	U
Beta-BHC	BDL	17000	U
Delta-BHC	BDL	17000	U
gamma-BHC (Lindane)	BDL	17000	U
Heptachlor	BDL	17000	U
Aldrin	BDL	17000	U
Heptachlor epoxide	BDL	17000	U
Endosulfan I	BDL	17000	U
Dieldrin	BDL	34000	U
4,4'-DDE	BDL	34000	U
Endrin	BDL	34000	U
Endosulfan II	BDL	34000	U
4,4'-DDD	BDL	34000	U
Endosulfan sulfate	BDL	34000	U
4,4'-DDT	BDL	34000	U
Methoxychlor	BDL	170000	U
Endrin ketone	BDL	34000	U

CER 080740



WESTON - COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phone: (312) 634-8200 (219) 888-7077 (815) 723-78

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: Friday October 6th, 1989

RE: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: UG/KG

PESTICIDE/PCBs BY GC, CLP LIST

Compound	Result	Detection Limit	Flag
alpha-Chlordane	BDL	170000	U
gamma-Chlordane	BDL	170000	U
Toxaphene	BDL	340000	U
Aroclor-1016	BDL	170000	U
Aroclor-1221	BDL	170000	U
Aroclor-1232	BDL	170000	U
Aroclor-1242	BDL	170000	U
X Aroclor-1248	5600000	170000	
Aroclor-1254	BDL	340000	U
X Aroclor-1260	7000000	340000	

CER 080741



WEST GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (312) 534-8200 (219) 885-7077 (915) 722

ANALYTICAL REPORT

To: Avendt Group, Inc.
432 North Saginaw Street
3rd Floor
Flint, MI 48502

Attn: Mr. Chris Bade

Date: October 6, 1989

Re: DI-1 & 3
Project # 5160-01-01-0001
Lab ID: 89096010-001
Sample Date: 09/25/89
Date Received: 09/26/89
Units: MG/KG

Organic Client Data Report

CER 080742



Cerro Copper
S.f.Tech
Applied Research & Development Laboratory

CHEMISTRY • BIOLOGY • PHYSIOLOGY
ENGINEERING • ENVIRONMENTAL ANALYSIS

16 October 1989

Mr. Ron Turpin
Illinois Environmental Protection Agency
Division of Laboratories
2200 Churchill Road
Springfield, IL 62794-9278

RE: Data Package Submittal
Facility: Cerro Copper Products
ARDL ID: 200110
Site Inventory No.: 1630200005

RECEIVED
IEPA
OCT 2 1989
COLLINSVILLE OFFICE

Dear Mr. Turpin:

Enclosed please find ARDL's final data package for analyses performed on samples delivered to our laboratory on 9/27/89. Seven (7) work day turnaround was requested and ARDL fax'd results only to Sue Doubet, IEPA on 10/6/89. The data package consists of the following.

1. Letter of Transmittal
2. Tabulated Analytical Results
3. Chain -of-Custody Documentation
4. Data Package Paginated and submitted in the following order:
 - a. Volume 1 - Inorganic Data Package
 - b. Volume 2 - Organic Sample Data Summary Package
 - c. Volume 3 - Volatiles Analysis Data Package
 - d. Volume 4 - Semi-Volatiles Analysis Data Package
 - e. Volume 5 - Pesticide/PCB Analysis Data Package

I have forwarded one (1) copy of the sample results for this package to Sue Doubet, IEPA.

We appreciate the opportunity to be of service to the IEPA.

Thank you.

Sincerely yours,

Daniel J. Gillespie
Daniel J. Gillespie
Technical Services Manager

RECEIVED

OCT 18 1989

CER 080743

IEPA-DLPC

P.O. Box 1566 • 1801 W. Forest Street • Mt. Vernon, Illinois 62864 • (618) 244-3235
"Test Everything - Keep The Good" / Thru. 6/21

INORGANIC ANALYSIS DATA SHEET
METALS

Lab Name ARDL, Inc.

IEPA Sample No. DI 02

Matrix (soil/water) Soil

Lab Sample ID: 200110-1

Level (low/med): _____

Date Received: 9/27/79

% Solids: 77

Concentration Units (ug/L or mg/kg dry weight) mg/Kg

CAS NO.	Analyte	Concentration	C	M	O
7429-90-5 Aluminum	3700	μ	P	x	
7440-36-0 Antimony	9.9	μ	P	N	
7440-38-2 Arsenic	5.8	μ		EH	
7440-39-3 Barium	20	μ	P	N	
7440-41-7 Beryllium	0.39	μ	P	N	
7440-43-9 Cadmium	2.4		P	x N	
7440-70-2 Calcium	25000		P		
7440-47-3 Chromium	47		P	x N E	
7440-48-4 Cobalt	23		P	x E	
7440-50-6 Copper	590		P	x	
7439-89-6 Iron	11-00		P	x	
7439-92-1 Lead	13		F	x	
7439-95-4 Magnesium	1700		P	x E	
7439-96-5 Manganese	58		P	x N	
7439-97-6 Mercury	0.36		CV		
7440-02-0 Nickel	830		P	x	
7440-05-7 Potassium	550		P	x	
7783-49-2 Selenium	1.0	in	EH		
7440-22-4 Silver	3.7		P	x N	
7440-23-5 Sodium	530		P		
7440-28-0 Thallium	0.62	μ	F		
7440-62-2 Vanadium	26		P	x E	
7440-66-6 Zinc	270		P	x N E	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

CER 080744

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ARDL, INC. Contract: CERRO COPPER | D102

Lab Code: ----- Case No.: 200110 SAS No.: ---- SDG No.: ----

Matrix: (soil/water) SOIL Lab Sample ID: 200110-1

Sample wt/vol: 4.0 (g/mL) G Lab File ID: >H1791

Level: (low/med) MED Date Received: 9/27/89

% Moisture: not dec. 23 Date Analyzed: 9/28/89

Column: (pack/cap) PACK Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/Kg	Q
74-87-3-----	Chloromethane	1300.	U	
74-83-9-----	Bromomethane	1300.	U	
75-01-4-----	Vinyl Chloride	1300.	U	
75-00-3-----	Chloroethane	1300.	U	
75-09-2-----	Methylene Chloride	5500.		
67-64-1-----	Acetone	1300.	U	
75-15-0-----	Carbon Disulfide	650.	U	
75-55-4-----	1,1-Dichloroethene	6600.		
75-34-3-----	1,1-Dichloroethane	650.	U	
540-59-0-----	1,2-Dichloroethene (total)	4900.		
67-66-3-----	Chloroform	650.	U	
107-02-2-----	1,2-Dichloroethane	650.	U	
78-93-3-----	2-Butanone	5200.	E	
71-55-6-----	1,1,1-Trichloroethane	650.	U	
56-23-5-----	Carbon Tetrachloride	650.	U	
108-05-4-----	Vinyl Acetate	1300.	U	
75-27-4-----	Bromodichloromethane	650.	U	
78-87-5-----	1,2-Dichloropropene	650.	U	
10061-01-5-----	cis-1,3-Dichloropropene	650.	U	
79-01-6-----	Trichloroethene	140000.	E	
124-48-1-----	Dibromochloromethane	650.	U	
79-00-5-----	1,1,2-Trichloroethane	650.	U	
71-43-2-----	Benzene	20000.		
10061-02-6-----	trans-1,3-Dichloropropene	650.	U	
75-25-2-----	Bromoform	650.	U	
108-10-1-----	4-Methyl-2-pentanone	1300.	U	
591-78-6-----	2-Hexanone	1300.	U	
127-18-4-----	Tetrachloroethene	12000.		
79-34-5-----	1,1,2,2-Tetrachloroethane	650.	U	
108-88-3-----	Toluene	21000.		
108-90-7-----	Chlorobenzene	110000.	E	
100-41-4-----	Ethylbenzene	9400.		
100-42-5-----	Styrene	650.	U	
108-38-3-----	m-Xylene	2500.		
106-42-3-----	o & p-Xylene	2300.		

FORM I VOA

CER 080745

1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: ARDL, INC.

Contract: CERRO COPPER

D102

Lab Code: ----- Case No.: 200110 SAS No.: ---- SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: >H1791

Level: (low/med) MED

Date Received: 9/27/89

% Moisture: not dec. 23

Date Analyzed: 9/28/89

Column: PACK

Dilution Factor: 1.00000

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	12.41	7800.	
2.	Unknown	16.39	1200.	
3.	Unknown	22.63	1200.	
4.	Unknown	26.66	170.	
5.	Unknown	29.02	69.	
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FORM I VOA-TIC

CER 080746

1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ARDL, INC.

Contract: CERRO COPPER

D102DL

Lab Code: ----- Case No.: 200110 SAS No.: ---- SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1DL

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: JH1805

Level: (low/med) MED

Date Received: 9/27/89

% Moisture: not dec. 23

Date Analyzed: 9/29/89

Column: (pack/cap) PACK

Dilution Factor: 10.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/Kg	Q
74-87-3-----	Chloromethane	13000.	I U D	
74-85-9-----	Bromomethane	13000.	I U D	
75-01-4-----	Vinyl Chloride	13000.	I U D	
75-00-3-----	Chloroethane	13000.	I U D	
75-09-2-----	Methylene Chloride	6500.	I U D	
67-64-1-----	Acetone	13000.	I U D	
75-15-0-----	Carbon Disulfide	6500.	I U D	
75-35-4-----	1,1-Dichloroethene	6500.	I U D	
75-34-3-----	1,1-Dichloroethane	6500.	I U D	
540-59-0-----	1,2-Dichloroethene (total)	6500.	I U D	
67-56-3-----	Chloroform	6500.	I U D	
107-02-2-----	1,2-Dichloroethane	6500.	I U D	
78-93-3-----	2-Butanone	13000.	I U D	
71-55-6-----	1,1,1-Trichloroethane	6500.	I U D	
56-23-5-----	Carbon Tetrachloride	6500.	I U D	
108-05-4-----	Vinyl Acetate	13000.	I U D	
75-27-4-----	Bromodichloromethane	6500.	I U D	
78-87-5-----	1,2-Dichloropropene	6500.	I U D	
10061-01-5-----	cis-1,3-Dichloropropene	6500.	I U D	
79-01-6-----	Trichloroethene	190000.	I D	
124-48-1-----	Dibromochloromethane	6500.	I U D	
79-00-5-----	1,1,2-Trichloroethane	6500.	I U D	
71-43-2-----	Benzene	22000.	I D	
10061-02-6-----	trans-1,3-Dichloropropene	6500.	I U D	
75-25-2-----	Bromoform	6500.	I U D	
108-10-1-----	4-Methyl-2-pentanone	13000.	I U D	
591-78-6-----	2-Hexanone	13000.	I U D	
127-18-4-----	Tetrachloroethene	23000.	I D	
79-54-5-----	1,1,2,2-Tetrachloroethane	6500.	I U D	
108-68-3-----	Toluene	21000.	I D	
108-90-7-----	Chlorobenzene	130000.	I D	
100-41-4-----	Ethylbenzene	17000.	I D	
100-42-5-----	Styrene	6500.	I U D	
108-38-3-----	m-Xylene	6500.	I U D	
106-42-3-----	o & p-Xylene	6500.	I U D	

FORM I VOA

CER 080747

1/67 Rev.

:E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D102DL

Lab Name: ARDL, INC.

Contract: CERRO COPPER

Lab Code: ----- Case No.: 200110 SAS No.: ---- SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1DL

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: :H1805

Level: (low/med) MED

Date Received: 9/27/89

% Moisture: not dec. 23

Date Analyzed: 9/29/89

Column: FACK

Dilution Factor: 10.0000

CONCENTRATION UNITS:

Number TICs found: 1

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	26.64	5100.	0
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CER 080748

FORM I VOR-TIC

1/87 Rev.

18 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DI02

Lab. Name: ARDL, INC. Contract: CERRO COPPER

Lab Code: Case No.: 200110 SAS No.: SDG No.: ----

Matrix: (soil/water) SOIL Lab Sample ID: 200110-1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: >B1154

Level: (low/med) MED Date Received: 9/27/89

% Moisture: not dec. 23 dec. ---- Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N pH:--- Dilution Factor: 5.00000

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/Kg Q

108-95-2-----Phenol	270000.	D
111-44-4-----bis(-2-Chloroethyl)ether	130000.	IUD
95-57-8-----2-Chlorophenol	130000.	IUD
541-73-1-----1,3-Dichlorobenzene	130000.	IUD
106-46-7-----1,4-Dichlorobenzene	2900000.	DE
100-51-6-----Benzyl alcohol	130000.	IUD
95-50-1-----1,2-Dichlorobenzene	2300000.	DE
95-48-7-----2-Methylphenol	130000.	IUD
39638-32-9-----bis(2-chloroisopropyl)ether	130000.	IUD
106-44-5-----4-Methylphenol	130000.	IUD
621-64-7-----N-Nitroso-Di-n-propylamine	130000.	IUD
67-72-1-----Hexachloroethane	130000.	IUD
98-95-3-----Nitrobenzene	130000.	IUD
78-59-1-----Isophorone	130000.	IUD
88-75-5-----2-Nitrophenol	130000.	IUD
105-67-9-----2,4-Dimethylphenol	130000.	IUD
65-85-0-----Benzoic acid	620000.	IUD
111-91-1-----bis(-2-Chloroethoxy)methane	130000.	IUD
120-83-2-----2,4-Dichlorophenol	1500000.	D
120-82-1-----1,2,4-Trichlorobenzene	8700000.	DE
91-20-3-----Naphthalene	15000.	IJD
106-47-8-----4-Chloroaniline	260000.	D
87-68-3-----Hexachlorobutadiene	130000.	IUD
59-50-7-----4-Chloro-3-methylphenol	130000.	IUD
91-57-6-----2-Methylnaphthalene	130000.	IUD
77-47-4-----Hexachlorocyclopentadiene	130000.	IUD
88-06-2-----2,4,6-Trichlorophenol	220000.	D
95-95-4-----2,4,5-Trichlorophenol	620000.	IUD
91-58-7-----2-Chloronaphthalene	130000.	IUD
88-74-4-----2-Nitroaniline	620000.	IUD
131-11-3-----Dimethyl Phthalate	130000.	IUD
208-96-8-----Acenaphthylene	130000.	IUD
606-20-2-----2,6-Dinitrotoluene	130000.	IUD

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ARDL, INC.

Contract: CERRO COPPER

DI02

Lab Code:

Case No.: 200110 SAS No.:

SDG No.:

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1

Sample wt/vol: 1.0 (g/mL)

Lab File ID: >B1154

Level: (low/med) MED

Date Received: 9/27/89

Moisture: not dec. 23 dec. ----

Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sonc) SONC

Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N

pH:---

Dilution Factor: 5.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
99-09-2	3-Nitroaniline	620000.	I U D
83-32-9	Acenaphthene	22000.	I J D
51-28-5	2,4-Dinitrophenol	620000.	I U D
100-02-7	4-Nitrophenol	620000.	I U D
132-64-9	Dibenzofuran	130000.	I U D
121-14-2	2,4-Dinitrotoluene	130000.	I U D
84-66-2	Diethylphthalate	130000.	I U D
7005-72-3	4-Chlorophenyl-phenylether	130000.	I U D
86-73-7	Fluorene	6000.	I J D
100-01-6	4-Nitroaniline	620000.	I U D
534-52-1	4,6-Dinitro-2-methylphenol	620000.	I U D
86-30-6	N-Nitrosodiphenylamine (1)	11000.	I J D
101-55-3	4-Bromophenyl-phenylether	130000.	I U D
118-74-1	Hexachlorobenzene	830000.	I D
87-86-5	Pentachlorophenol	290000.	I J D
85-01-8	Phenanthrene	130000.	I U D
120-12-7	Anthracene	130000.	I U D
84-74-2	Di-n-butylphthalate	130000.	I U D
206-44-0	Fluoranthene	130000.	I U D
129-00-0	Pyrene	130000.	I U D
85-68-7	Butylbenzylphthalate	130000.	I U D
91-94-1	3,3'-Dichlorobenzidine	260000.	I D
56-55-3	Benzo(a)anthracene	130000.	I U D
218-01-9	Chrysene	130000.	I U D
117-81-7	bis(2-Ethylhexyl)phthalate	130000.	I U D
117-84-0	Di-n-Octyl Phthalate	130000.	I U D
205-99-2	Benzo(b)fluoranthene	130000.	I U D
207-08-9	Benzo(k)fluoranthene	130000.	I U D
50-32-8	Benzo(a)pyrene	130000.	I U D
193-39-5	Indeno(1,2,3-cd)pyrene	130000.	I U D
53-70-3	Dibenzo(a,h)anthracene	130000.	I U D
191-24-2	Benzo(g,h,i)perylene	130000.	I U D

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DIO2

Lab Name: ARDL, INC.

Contract: CERRO COPPER

Lab Code: ----

Case No.: 200110

SAS No.: ----

SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1

Sample wt/vol: 1.0 (g/mL)

Lab File ID: >B1154

Level: (low/med) MED

Date Received: 9/27/89

Moisture: not dec.

dec.

Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sonc) SONC

Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N

pH:---

Dilution Factor: 5.00000

CONCENTRATION UNITS:

Number TICs found: 20

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 100005	Benzene, 1-chloro-4-nitro-	11.44	140000.	D
2.	Benzene, tetrachloro-	12.91	3600000.	D
3.	Benzenamine, dichloro-	13.15	200000.	D
4.	Unknown	14.10	390000.	D
5.	Unknown	15.51	2400000.	D
6.	Unknown	15.97	630000.	D
7.	Unknown	17.37	240000.	D
8.	Unknown PCB	17.63	260000.	D
9.	Unknown PCB	19.76	280000.	D
10.	Unknown alkane	20.78	410000.	D
11.	Unknown alkane	21.77	570000.	D
12.	Unknown alkane	23.61	720000.	D
13.	Unknown	23.67	300000.	D
14.	1,1'-Biphenyl, hexachloro-	24.24	370000.	D
15.	Unknown alkane	24.46	610000.	D
16.	Unknown	24.79	870000.	D
17.	1,1'- Biphenyl, heptachloro-	25.51	370000.	D
18.	Unknown alkane	26.08	1200000.	D
19.	Unknown alkane	26.84	620000.	D
20.	Unknown	27.34	470000.	D
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FORM T SV-TIC

CER 080751

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ARDL, INC.

Contract: CERRO COPPER

I.DIOZDL

Lab Code: Case No.: 200110 SAS No.: SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1DL

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: >B1158

Level: (low/med) MED

Date Received: 9/27/89

% Moisture: not dec. 23 dec. ----

Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sanc) SONC

Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N pH:----

Dilution Factor: 50.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/Kg	Q
108-95-2	Phenol	200000.	I J D	
111-44-4	bis(-2-Chloroethyl)ether	1300000.	I U D	
95-57-8	2-Chlorophenol	1300000.	I U D	
541-73-1	1,3-Dichlorobenzene	1300000.	I U D	
106-46-7	1,4-Dichlorobenzene	3900000.	I D	
100-51-6	Benzyl alcohol	1300000.	I U D	
95-50-1	1,2-Dichlorobenzene	3100000.	I D	
95-48-7	2-Methylphenol	1300000.	I U D	
-39638-32-9	bis(2-chloroisopropyl)ether	1300000.	I U D	
106-44-5	4-Methylphenol	1300000.	I U D	
621-64-7	N-Nitroso-Di-n-propylamine	1300000.	I U D	
67-72-1	Hexachloroethane	1300000.	I U D	
98-95-3	Nitrobenzene	1300000.	I U D	
78-59-1	Isophorone	1300000.	I U D	
88-75-5	2-Nitrophenol	1300000.	I U D	
105-67-9	2,4-Dimethylphenol	1300000.	I U D	
65-85-0	Benzoic acid	6200000.	I U D	
111-91-1	bis(-2-Chloroethoxy)methane	1300000.	I U D	
120-83-2	2,4-Dichlorophenol	1400000.	I D	
120-82-1	1,2,4-Trichlorobenzene	16000000.	I D	
91-20-3	Naphthalene	1300000.	I U D	
106-47-8	4-Chloraniline	120000.	I J D	
87-68-3	Hexachlorobutadiene	1300000.	I U D	
59-50-7	4-Chloro-3-methylphenol	1300000.	I U D	
91-57-6	2-Methylnaphthalene	1300000.	I U D	
77-47-4	Hexachlorocyclopentadiene	1300000.	I U D	
88-06-2	2,4,6-Trichlorophenol	400000.	I J D	
95-95-4	2,4,5-Trichlorophenol	6200000.	I U D	
91-58-7	2-Chloronaphthalene	1300000.	I U D	
88-74-4	2-Nitroaniline	6200000.	I U D	
131-11-3	Dimethyl Phthalate	1300000.	I U D	
208-96-8	Acenaphthylene	1300000.	I U D	
606-20-2	2,6-Dinitrotoluene	1300000.	I U D	

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

DIO2DL

Lab Name: AROL, INC. Contract: CERRO COPPER

Lab Code: Case No.: 200110 · SAS No.: SOG No.:

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1DL

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: >B1158

Level: (low/med) MED

Date Received: 9/27/89

% Moisture: not dec. 23 dec.

Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sonic) SONIC

Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N pH: ---

Dilution Factor: 50.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
		Q	
99-09-2	3-Nitroaniline	6200000.	I U D
83-32-9	Acenaphthene	1300000.	I U D
51-28-5	2,4-Dinitrophenol	6200000.	I U D
100-02-7	4-Nitrophenol	6200000.	I U D
132-64-9	Dibenzofuran	1300000.	I U D
121-14-2	2,4-Dinitrotoluene	1300000.	I U D
84-66-2	Diethylphthalate	1300000.	I U D
7005-72-3	4-Chlorophenyl-phenylether	1300000.	I U D
86-73-7	Fluorene	1300000.	I U D
100-01-6	4-Nitroaniline	6200000.	I U D
534-52-1	4,6-Dinitro-2-methylphenol	6200000.	I U D
86-30-6	N-Nitrosodiphenylamine (1)	1300000.	I U D
101-55-3	4-Bromophenyl-phenylether	1300000.	I U D
118-74-1	Hexachlorobenzene	1300000.	I U D
87-86-5	Pentachlorophenol	6200000.	I U D
85-01-8	Phenanthrene	1300000.	I U D
120-12-7	Anthracene	1300000.	I U D
84-74-2	Di-n-butylphthalate	1300000.	I U D
206-44-0	Fluoranthene	1300000.	I U D
129-00-0	Pyrene	1300000.	I U D
85-68-7	Butylbenzylphthalate	1300000.	I U D
91-94-1	3,3'-Dichlorobenzidine	2600000.	I U D
56-55-3	Benzo(a)anthracene	1300000.	I U D
218-01-9	Chrysene	1300000.	I U D
117-81-7	bis(2-Ethylhexyl)phthalate	1300000.	I U D
117-84-0	Di-n-Octyl Phthalate	1300000.	I U D
205-99-2	Benzo(b)fluoranthene	1300000.	I U D
207-08-9	Benzo(k)fluoranthene	1300000.	I U D
50-32-8	Benzo(a)pyrene	1300000.	I U D
193-39-5	Indeno(1,2,3-cd)pyrene	1300000.	I U D
53-70-3	Dibenzo(a,h)anthracene	1300000.	I U D
191-24-2	Benzo(g,h,i)perylene	1300000.	I U D

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

SEMOVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

DIO2DL

Lab Name: ARDL, INC.

Contract: CERRO COPPER

Lab Code:

Case No.: 200110 SAS No.: ----

SDG No.: ----

Matrix: (soil/water) SOIL

Lab Sample ID: 200110-1DL

Sample wt/vol: 1.0 (g/mL)

Lab File ID: >B1158

Level: (low/med) MED

Date Received: 9/27/89

Moisture: not dec. 23

dec. ----

Date Extracted: 10/02/89

Extraction: (Sepf/Cont/Sonc) SONC

Date Analyzed: 10/03/89

GPC Cleanup: (Y/N) N

pH:----

Dilution Factor: 50.00000

CONCENTRATION UNITS:

Number TICs found: 20

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	10.99	1600000.	D
2.	Benzene, tetrachloro	12.83	6000000.	D
3.	Benzene, tetrachloro	13.55	12000000.	D
4. 608935	Benzene, pentachloro	15.46	6000000.	D
5.	Unknown	15.95	620000.	D
6.	Unknown aromatic	17.36	200000.	D
7.	Unknown PCB	17.61	250000.	D
8.	Unknown alkane	19.75	240000.	D
9.	Unknown PCB	20.28	180000.	D
10.	Unknown alkane	20.76	390000.	D
11.	Unknown PCB	21.57	210000.	D
12.	Unknown alkane	21.75	550000.	D
13.	Unknown alkane	23.57	1400000.	D
14.	Unknown PCB	24.21	830000.	D
15.	Unknown alkane	24.43	1300000.	D
16.	Unknown PAH	24.75	1200000.	D
17.	Unknown PCB	25.48	920000.	D
18.	Unknown	26.02	810000.	D
19.	Unknown alkane	26.05	1400000.	D
20.	Unknown alkane	26.82	540000.	D
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FORM T SV-TTC

CER 080754

FORM I PEST

Pesticide Organics Analysis Data Sheet

Customer Sample No.

D102

Lab Name: ARDL, INC. Contract: Cerro_Copper_Products
 Lab Code: _____ Case No.: 200110 SAS No.: _____ SDG No.: _____

Matrix (soil/water) : soil_____
 Sample wt/vol : 1.0(g/mL)_g
 Level (low/med) : med_____
 % Moisture(not dec) : 23_____
 Extraction(Sepf/Sonc) : Sonc_____
 GPC Cleanup (Y/N) : No pH: _____
 Lab Sample ID : 200110-1
 Lab File ID : >B1159
 Date Received : 09/27/89
 Date Extracted : 09/28/89
 Date Analyzed : 10/03/89
 Dilution Factor: 100.0

CAS No.	Compound	Concentration Units: ug/kg (ug/L or ug/kg)	Q
---------	----------	---	---

319-84-6	alpha-BHC	31000	U
319-85-7	beta-BHC	31000	U
319-86-8	delta-BHC	31000	U
58-89-9	gamma-BHC(Lindane)	31000	U
76-44-8	Heptachlor	31000	U
309-00-2	Aldrin	31000	U
1024-57-3	Heptachlor epoxide	31000	U
959-98-8	Endosulfan I	31000	U
60-57-1	Dieldrin	62000	U
72-55-9	4,4'-DDE	62000	U
72-20-8	Endrin	62000	U
33213-65-9	Endosulfan II	62000	U
72-54-8	4,4'-DDD	62000	U
1013-07-8	Endosulfan sulfate	62000	U
50-29-3	4,4'-DDT	62000	U
72-43-5	Methoxychlor	310000	U
53494-70-5	Endrin ketone	62000	U
5103-71-9	alpha-Chlordane	31000	U
5103-74-2	gamma-Chlordane	31000	U
8001-35-2	Toxaphene	620000	U
12674-11-2	Aroclor 1016	31000	U
11104-28-2	Aroclor 1221	31000	U
11141-16-5	Aroclor 1232	31000	U
53469-21-9	Aroclor 1242	100000000	C
12676-29-6	Aroclor 1248	31000	U
11097-69-1	Aroclor 1254	98000000	C
11096-82-5	Aroclor 1260	110000000	C

FORM I PEST

1/87 Rev.

CER 080755

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CER 080756

TASK FOI
CHIEF OF STAFF NIZENES

KRUMMICH PLANT FUTURE ENVIRONMENTAL ISSUES

CHLOROBENZENES TASK FORCE
FEB. 24, 1989

AIR ISSUES

POSSIBLE ILLINOIS EPA STORAGE TANK EMISSION REGULATIONS

- * LIKELY APPLICABLE TO SOME PROCESS VESSELS
- * COMPLIANCE BY LATE 1991 (?)
- * INTEGRATE WITH TITLE III AIR REDUCTION PROGRAM

WATER ISSUES

YELLOW EFFLUENT

- * ONA/PNA AND NCBs
- * VARIANCE EXPIRES '9/89
- * EXPECT TO ADDRESS THROUGH
 - PRETREATMENT
 - CARBON ADDITION AT AMERICAN BOTTOMS
 - NEW EFFLUENT DIFFUSER

ACUTE TOXICITY

- * SAUGET LOCAL LIMITS WILL REQUIRE AMMONIA CONTROLS AT ONA/PNA INDEPENDENT OF PRETREATMENT
 - REQUIRED BY SECOND QUARTER 1992 BUT USEPA WILL DEMAND BY EARLY 1991
- * SHOULD BE REDUCED BY
 - PRETREATMENT
 - CARBON ADDITION AT AMERICAN BOTTOMS
 - NEW EFFLUENT DIFFUSER / MIXING ZONE

CER 080757

CHRONIC TOXICITY - PERSISTENCE - BIO CONCENTRATION

* NCBs AND NITROANILINES MAY NEED ADDITIONAL TREATMENT BEYOND PRETREATMENT

- DEPENDS ON MIXING ZONE
AND PERMIT LIMITS

* BETTER DEFINITION IN 2-4 MONTHS

- PERMIT DISCUSSIONS WILL BE IN PROGRESS

- MIXING ZONE RULES WILL BE BETTER
DEFINED

SPILL CONTROL

* ADDITIONAL REQUIREMENTS PER NEW ILLINOIS STORAGE TANK
RULES

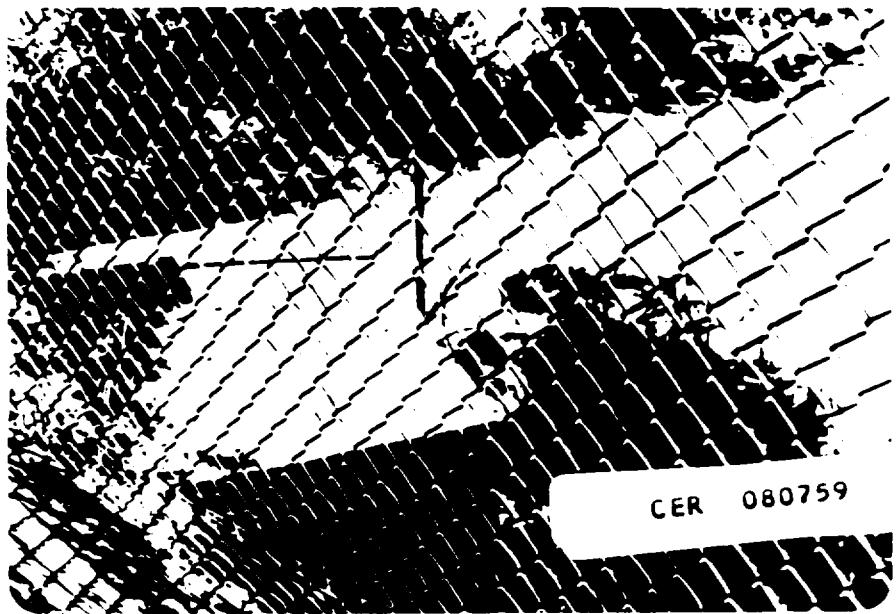
- NEW TANK FARM SHOULD ADDRESS

SOLIDS

NO NEW CAPITAL ANTICIPATED

OPERATING COST COULD BE INFLUENCED BY TREATMENT PLANT SLUDGE
DISPOSAL COSTS

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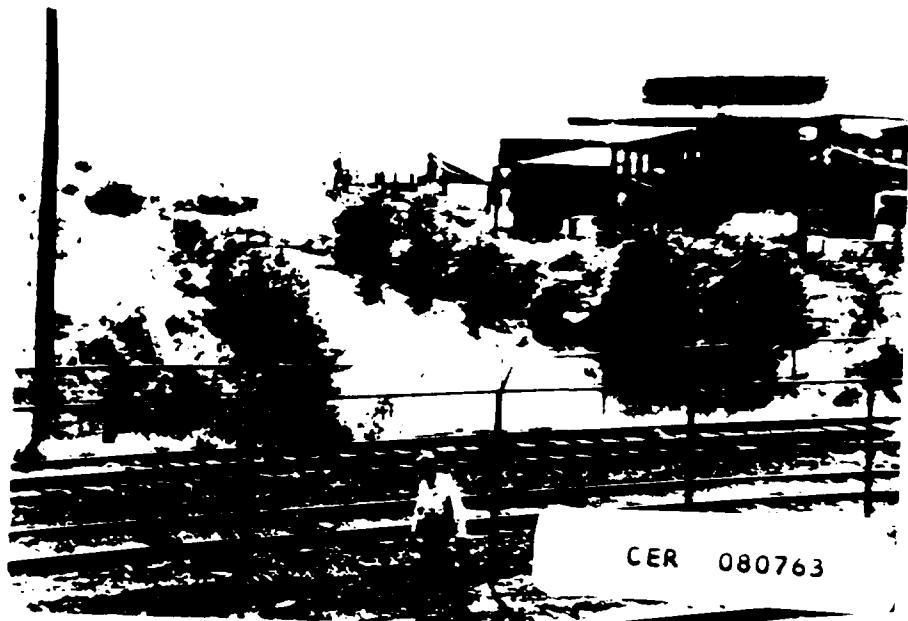
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CONFIDENTIAL 92-CV-204-WDS

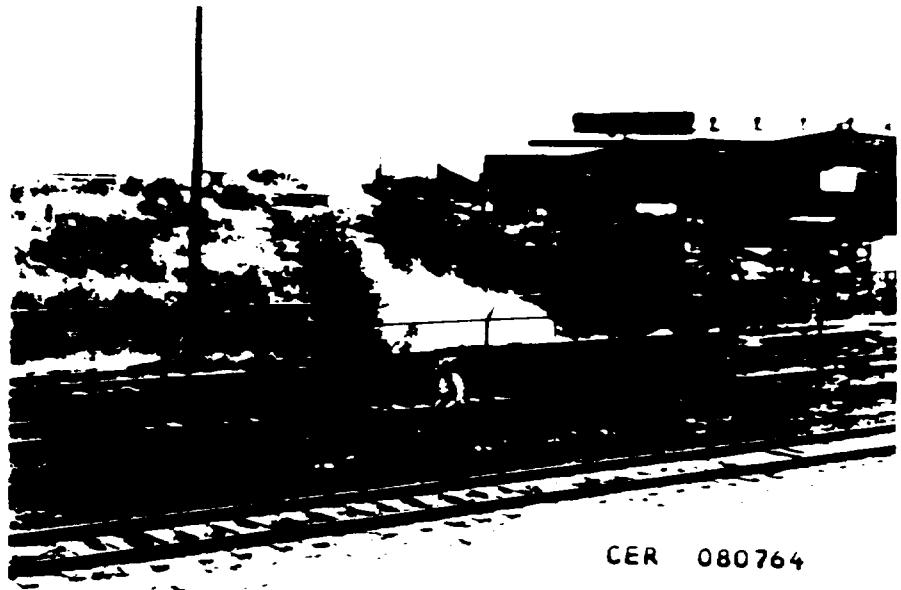
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CER 080763

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CER 080764

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